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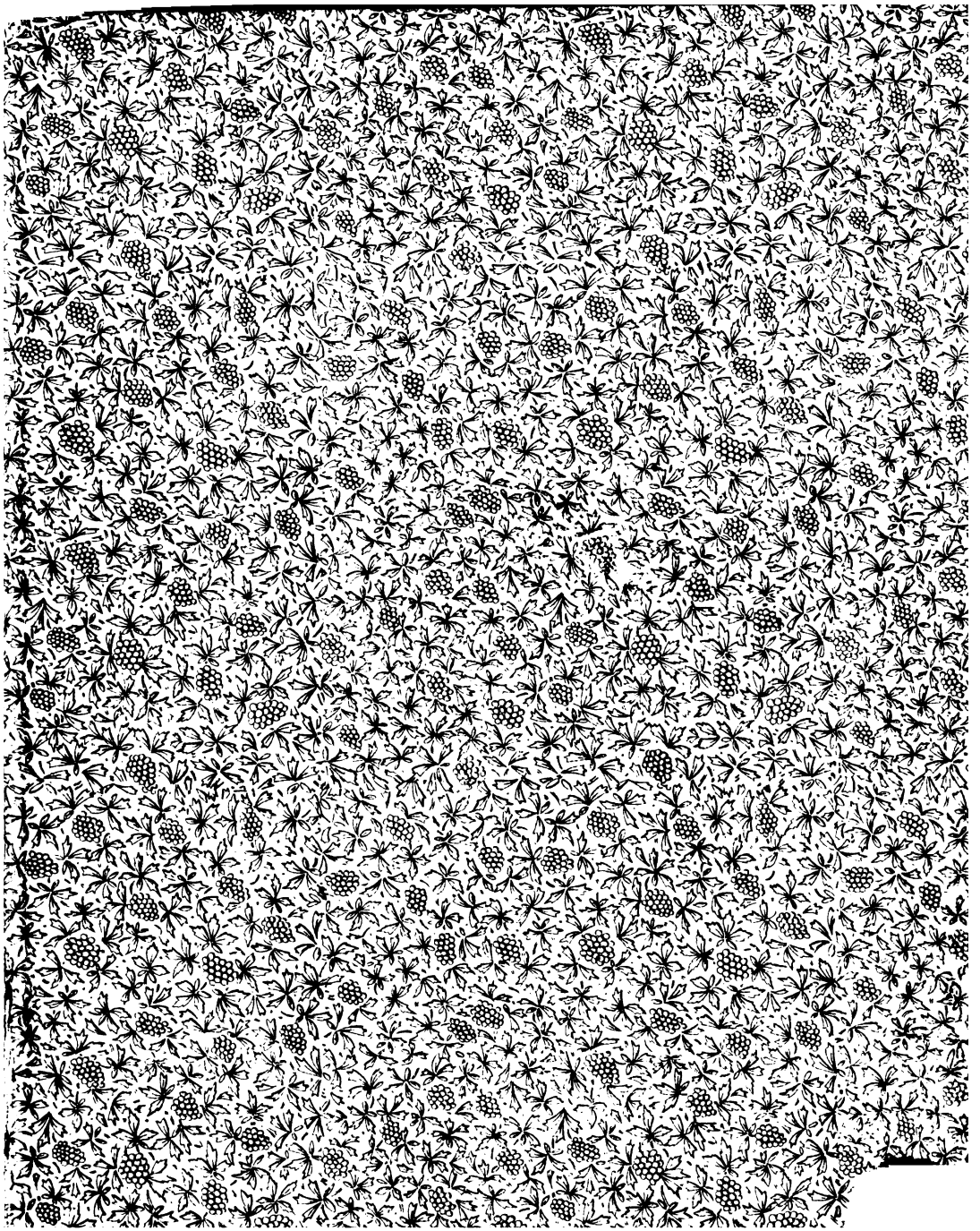

CHINA PAINTING.

A PRACTICAL MANUAL

FOR THE USE OF

AMATEURS IN THE DECORATION OF HARD PORCELAIN.

BY

M. LOUISE McLAUGHLIN.

"He may do what he will that will but do what he may."—*Arthur Warwick.*

SIXTEENTH THOUSAND.

CINCINNATI:

ROBERT CLARKE & CO.

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"Success depends on knowing how to be patient, how to endure drudgery, how to unmake and remake, how to recommence and continue without allowing the tide of anger or the flight of the imagination to arrest or divert the daily effort.

H. TAINE.

The art of painting on china is certainly a beautiful one, and is, perhaps, peculiarly fitted to be an agreeable pastime for persons of leisure. There is, however, too general a tendency to consider it simply in the light of an amusement, unworthy of serious study, and an art for the practice of which no special training or knowledge is necessary.

Now, what is worth doing at all is worth doing well, and the idea that one can successfully practice any branch of art without having previously learned to draw is false. The eye and hand must be trained, and the taste cultivated, before any result worthy of the name can be achieved.

The best foundation for any art-work is a

thorough knowledge of drawing; and the time spent in acquiring such knowledge will never be regretted. It is true that there are methods of decorating china with simple designs, which may be accomplished by those unskilled in the use of the pencil or brush; yet, as the hand of the master is revealed in the most careless sketch, so the want of skill or freedom of touch is apparent in the treatment of the simplest subject.

To those who have the time and patience, as well as the natural ability to learn to draw, we would say: Make it your first business to acquire that knowledge. Cultivate your taste by study of the best models; educate the eye to perceive beautiful forms in nature or art, and the hand to transcribe them.

Painting on china, may not offer the same facilities for the truthful rendering of nature as oil or water-color painting, but it has other compensating advantages in the beauty of the enamel, and the enduring qualities of the pigments, when fixed by the fire.

With the present greatly increased facilities

afforded by the improvements in the manufac ture of colors, china painting should regain something of its former prestige among the arts In other times the greatest artists exercised their art upon this material, which, seemingly so frail, has preserved their work unharmed for ages.

A revival of the art, however, can not be expected from a servile copying of the old designs and methods. As well might the artists of the modern school have expected to arrive at their present knowledge of *technique* by copying the pictures of Durer or Van Eyck.

There will be no true revival of any branch of art unless founded upon study of nature and the adaptation of her principles to design, and there will likewise be no advance possible to the individual art student without this study and practice.

This study brings with it its own reward in the cultivation of what has been called the artistic sense, which, in the words of Thackeray, reveals "splendors of nature, to vulgar sights invisible, and beauties manifest in forms, colors, shad-

ows of common objects, where most of the world saw only what was dull, and gross, and familiar. One reads in the magic story-books of a charm or a flower which the wizard gives, and which enables the bearer to see the fairies. O enchanting boon of nature, which reveals to the possessor the hidden spirits of beauty round about him—spirits which the strongest and most gifted masters compel into painting or song! To others it is granted but to have fleeting glimpses of that fair art-world, and tempted by ambition, or barred by faint-heartedness, or driven by necessity, to turn away thence to the vulgar life-track and the light of common day."

CHAPTER I.

FIRING.

Firing, the final process of china painting, which crowns the work with success or ruins it past redemption, necessarily claims a large share of the attention of the ceramic artist.

In the first place, the painting must be executed with reference to the effect which the firing will have upon the colors, as will be explained hereafter.

But, even when the details of the painting have been most carefully planned to meet the exigencies of the fiery ordeal through which it has to pass, disaster may result from the carelessness or stupidity of the person to whom

this important part of the work has been intrusted.

The uncertainty of the result, from this cause, is the most serious drawback to this charming pursuit, and causes the china painter untold annoyance. Nothing can be more trying than to receive a piece of work, upon which much labor has been expended with perhaps exceptionally good results, from the hands of the firer broken or blistered, so as to be completely worthless. Then, too, the tedious waiting for an article, which you wish to have finished at a certain time but which must await the pleasure or convenience of the professional decorator, is a serious inconvenience. These and other annoyances, as well as the fact that the services of a professional decorator can only be procured in our large cities, have resulted in the production of several inventions by which amateurs can fire their work at home.

The Amateur's Portable Kiln, invented some years ago by Mrs. N. M. Fitch, is now very

extensively used, and has been of the greatest service to amateur decorators. This kiln, as first manufactured, was intended for the use of charcoal as a fuel, but the recent introduction of kilns which can be fired by gas has still further simplified the process of firing for amateurs. The new gas kiln, which has beer brought out by the Stearns-Fitch Co., works very satisfactorily, while the cleanliness and absence of smoke in the process render it possible to set it up indoors, in a cellar or even in a studio. The firing occupies from one and a half to two hours, according to the quality and pressure of the gas, and the kiln should not be opened until it has cooled sufficiently to allow the ware to be handled. There will then be no danger of injury to the work from exposure to a lower temperature. This method of firing insures perfect control in the regulation of the heat, and it may be said that the gas kiln is the perfection of convenience for all who have at command either natural or artificial gas.

The whole is so simple in its construction, so easily managed, and productive of such good results as to meet a long-felt want of amateur china painters in a most satisfactory way.

With the aid of this invention the artist can control the entire work from beginning to end, and if it is spoiled will have nobody to blame but himself. It may be natural to wish to lay the blame on some one else in case of failure, but, in spite of the satisfaction the opportunity to do this may give, it is, undoubtedly, true that the nearer one is able to control all the stages of any work the better.

I confess to having formerly looked with distrust upon amateur firing, as I considered that that part of the work would require an amount of experience only to be gained by a tedious succession of failures, and only to be thought of when the artist resided at a distance from the cities where it could be done by professional decorators.

My own experience with the Portable Kiln

has, therefore, been attended with surprise as well as pleasure. I found that, without any particular experience in firing, results could be attained by its aid superior to any firing I had ever had done. And then, the results are uniformly successful instead of, as before, uncertain, and there it is no longer the trouble and risk of carrying pieces to and from the firer, nor the waiting for the firing. A piece of work can be executed and fired in the same day if the painter so wishes; and if repeated firings are found to be desirable, they can be given without the vexatious delay which would otherwise render it a matter of doubtful expediency, or, perhaps, an impossibility, from lack of time.

From my experience with this kiln, therefore, I can recommend it to amateurs without hesitation, and am glad to be able at last to offer in the invention of Mrs. Fitch, so good a solution of the difficulties which have heretofore beset the question of firing china.

CHAPTER II.

MATERIALS.

The china used for decoration should be of the very finest quality, free from spots or other imperfections of the enamel.

Pieces fulfilling these conditions are difficult to find. However, those only should be selected which are as free from defects as it is possible to obtain them. The hard porcelain of French manufacture is the best for the purpose of decorating.

The colors for painting on china must be vitrifiable, having in addition to the coloring matter a vitreous flux, as it is called, which fixes the coloring matter under the action of the fire, and at the same time imparts great brilliancy and durability to the colors.

Until a comparatively recent date they were procured in powder and mixed by the artist

with the oils necessary to their use. As the success of the work largely depends upon the proper grinding and preparation of the colors, this method involves considerable risk in the hands of beginners, besides being tedious and annoying to those more experienced. Now that a method of putting up the colors in tubes has been adopted, this tiresome and uncertain process is no longer necessary. Some china painters still prefer to use the powdered colors. Having used both, I would most readily declare in favor of the tube colors, when properly prepared, and think that a like decision will be the result in any case where they are fairly tried. In the following pages, the palettes recommended will be composed from the colors manufactured by M. Lacroix, of Paris. Having had considerable experience in their use, I consider them the best made, and can say of them, that they leave nothing to be desired.

Colors of different manufacture should not be used together in painting.

Brushes for water-color painting may also be

used on china. Those of medium size, with good points, are the best.

Small camels'-hair brushes with square ends may be had, which will do for blending, when necessary in fine work.

For tinted surfaces, borders, etc., large blenders are necessary. The brushes used by gilders, and called in the trade gilders' dusters, make good blenders for this purpose. No. 9 is a very good size.

For placing the color on these surfaces, a broad, flat camels'-hair brush rather more than an inch in width should be used. For narrow bands and lines, brushes of suitable size, with very long hairs and square ends, are used.

To recapitulate and sum up the materials necessary for painting on china, I would enumerate the following items

1. A set of tube colors, more or less in number, according to the scope of the work to be done.

As the colors can not be mixed with as great freedom as those for water-color painting, or even oil colors, it is better to have a greater variety than might be necessary in either of those branches of art. For a list which would include the colors desirable to have for every style of painting, containing nothing unnecessary, and from which those requisite for any particular subject could be selected according to the palettes given hereafter under the various heads, we would offer the following:

REDS AND RED BROWNS.

Carmine, No. 3, foncé—Dark carmine.
Rouge chair, No. 2—Flesh red, No. 2.
Rouge capucine—Capucine red.
Brun rouge riche—Dark red brown.
Violet de fer—Iron violet.

PURPLES.

Pourpre riche—Deep purple.
Violet d'or foncé—Dark golden violet.

BLUES.

Bleu ciel ou azur—Sky blue.
Bleu-outremer riche—Dark ultramarine.
Bleu riche—Deep blue.

GREENS.

Vert, No. 5, pré—Grass green.
Vert, No. 6, brun—Brown green.
Vert pomme—Apple green.

YELLOWS.

Jaune à mêler—Mixing yellow.
Jaune d'ivoire—Ivory yellow.
Jaune jonquille—Jonquil yellow.
Jaune orangé—Orange yellow.

BROWNS.

Brun 4 foncé ou 17—Dark brown.
Brun jaune—Yellow brown.

BLACK.

Noir d'ivoire—Ivory black.

WHITE.

Blanc fixe—Permanent white.

GREYS.

Gris, No. 6, perle.—Pearl grey.

Gris noir—Black grey.

2. A porcelain palette.

3. A glass slab about eight inches square.

4. Several small and medium-sized camels' hair brushes.

5. Several blenders, large and small.

6. A quart bottle of spirits of turpentine.

7. A quart bottle of 98 per cent. alcohol.

8. A small bottle of oil of turpentine, one of oil of lavender, and one of balsam of copaiva.

9. A steel palette knife; also one of horn or ivory.

10. A rest for the hand while painting, made of a strip of wood about an inch and a half wide and twelve inches long, supported at each end by a foot, an inch and a half in height. A

flat ruler or thin strip of wood may be used for plates, or any flat piece having a raised edge, and may be found more convenient than the more cumbrous rest.

11. A fine needle, set in a handle, for removing particles of dust which may settle in the painting.

12. A small glass muller.

A full outfit, such as is mentioned above, can be procured at a cost of from ten to twelve dollars.

A very useful article, which might be added to the china painters' outfit, is the plaque and vase holder, an instrument by which a plaque or vase can be held in place while the painting is in progress, and furnished with a convenient hand rest.

The list as given above is intended as a guide for beginners in China painting pure and simple. When more elaborate work is undertaken, other materials and colors must be added. Lists of the mat or gouache colors will be given in the chapter devoted to them.

CHAPTER III.

PREPARING THE DESIGN.

In commencing to paint a design on china, the first thing to be done, of course, is to sketch the outline. The best way to do this is to prepare the china by rubbing the surface with spirits of turpentine, and, after having left it a few moments to dry, draw the design upon it very lightly with a hard lead pencil.

Alcohol may also be used for the same purpose, and has the advantage, that it is not so liable to catch the dust. The surface, however, does not receive the marks of the lead pencil so well as when it is prepared with turpentine. Lithographic crayon may also be used, and without any preparation, but the outline is not so delicate as that drawn with the lead pencil.

If the subject is a difficult one, as for instance, a design containing several figures, time may be

saved and liability to error avoided by tracing the design, which insures the correct relative position of the figures, and tends to produce the object desired, a correct copy of the original. It is better, however, to sketch simpler subjects directly upon the china.

It is commonly supposed that a tracing is of great assistance to any one unskilled in drawing, but if one is unable to draw a correct outline, it is hardly possible that the painting will be better. It is so very easy to lose the outline in working, that, after all, a tracing is but a slight indication, which has, for its principal use, the placing of the design in exactly the right position on the plate or other object to be decorated.

There are various ways of tracing; the simplest and best of which is the following: Lay a piece of transparent paper over the design to be copied, and trace the outlines very carefully with a hard lead pencil, then turn the tracing paper over on any white surface, and go over all the lines on the reverse side with a soft pencil. You

can now lay the tracing, right side up, on the china, which has been previously prepared for the lead pencil with turpentine, and having placed it in exactly the right position, secure it by means of bits of modelling wax or gummed paper at the corners, and pass over the lines with a hard point, or rub the entire surface with a rounded instrument. The handle of the palette knife may be used for this purpose. This will transfer the pencil drawing to the surface of the china.

The more delicate the outline the better, provided it is plainly visible, as a heavy, dark or colored outline sullies the colors used upon it, and causes much annoyance in working. Although it may disappear in the firing, it is better to avoid it. Faulty lines in the tracing may be rectified by the use of a sharpened stick of soft wood moistened with turpentine.

CHAPTER IV.

GENERAL DIRECTIONS FOR PAINTING.

These directions are confined to the use of enamel colors on hard porcelain. This material is suitable for every style, and as the painting is done on the glaze, is capable of receiving the highest degree of finish.

A plate or flat plaque is the best subject for a beginner, as it is more easily managed than cups or other articles with rounded surfaces.

As stated before, the colors in tubes are especially to be recommended to the novice.

If the powdered colors are used, however, the powder should be well rubbed down with a little oil of turpentine and thinned with the spirits of turpentine, a saucer of which should be kept on the table while working, and used in the same way that water is used in water-color painting—for diluting the paint and washing the brushes.

If the tube colors are used, it will simply be necessary to dilute them with turpentine. If they are difficult to lay, a drop or so of oil of turpentine may be added to the spirits of turpentine. Care should be taken, however, to avoid an excess of oil, as it renders the colors liable to blister in the fire.

The use of clove oil as a medium is advised by some. The color can perhaps be more easily laid with it than with spirits of turpentine. It does not dry so quickly, however, and unless recourse is had to the process of drying the work with the aid of an alcohol lamp, its use involves tedious waiting. Others recommend oil of lavender. For my own part, I think the use of spirits of turpentine decidedly preferable, as in that case no time need be lost in waiting for the work to dry, and it is possible to finish a painting in one sitting.

The drying of the colors is affected by the state of the atmosphere. Statements, therefore, that are founded on the usage of foreign painters, with reference to this point, are prac

tically of little value here, as the difference in climate changes the conditions under which the work is executed.

If during the progress of the painting it is found to be difficult to work over the colors first laid, which are indeed very liable to come up, the piece of china may be placed in a moderately warm oven, to dry, before proceeding. On being taken out of the oven, the colors will be found to have lost their gloss, if perfectly dry, and perhaps will have changed their hue. No alarm need be felt at this, as they will return to their former brilliancy when fired.

Some china painters disapprove altogether of any rapid method of drying, and only advise that the work be laid aside until dry, others dry it by means of an alcohol lamp. If you use spirits of turpentine as a medium, however, the part first done will, as a general thing, become dry enough to work over while you are engaged on other portions of the design.

A second vessel containing turpentine should be kept on the working table, for the purpose of

washing the brushes, especially when the same one is used for various colors.

After using a color containing iron, the brush should be carefully washed before it is charged with one which does not contain iron, or if white is to be used.

The brushes ought not to be too small, and the colors should, as far as possible, be laid in broad washes, and decided touches placed lightly and quickly and not overworked. The use of the blender may be resorted to if necessary, especially in laying the first washes, although it is better to avoid it afterward if possible.

The same rules may be applied to china painting as to water-colors, to which it bears a close resemblance. The greatest art consists in placing each touch where it should go and leaving it, not spoiling it by uncertainty or degrading the tint by overwork. In fine work, lining and stippling are necessary in finishing, but should not be carried to excess or made too apparent. These latter processes are, perhaps, more indispensable in preparing work for a single firing, as it is very

difficult to lay repeated washes over one another, the under tint comes up so readily, especially when it is not thoroughly dry.

The same place must never be passed over by the brush twice in immediate succession, as the under tint will certainly come up, and the blot caused in the painting will be difficult to rectify. It is of no use to attempt it while it is wet; work on some other part and then go over it, or first dry it in the oven.

Some of the tube colors may require to be rubbed down after being taken from the tubes. This will be especially necessary in the case of the carmines and whites. A horn or ivory palette knife should be used with these colors, as well as with the blues, and all colors containing no iron. Mixtures of colors on the palette may be rubbed down occasionally or mixed with the brush before using, to prevent them from separating themselves into their component parts.

Too much turpentine should not be taken into the brush when it is to be charged with color. Dip it into the turpentine, and, remove

the surplus moisture by drawing the brush over the edge of the vessel containing it, before taking up the color from the palette. The tint may be tried first on the edge of the plate. Surplus color or moisture may be removed by touching the brush upon a muslin rag, which should always be at hand for the purpose of wiping the brushes.

After using, the brushes should be washed in alcohol. The bottle containing it must be kept tightly corked, as it evaporates very quickly when exposed to the air. Care must be taken that no drops of the alcohol fall upon the painting, as it will immediately remove the colors from the surface. When the large brushes are cleaned, after being washed in the alcohol, the hairs should be spread apart, and the fingers passed lightly over them until they are dry; otherwise, the hairs may stick together in drying, and the brush be rendered unfit for use. Washing in alcohol will prevent the turpentine used in painting from injuring the brushes, as it would if allowed to remain in them.

As a general rule, the shadows should be painted a little darker than they are to appear when finished, as they are liable to become lighter in the firing.

Dust floating in the atmosphere is very annoying, as it attaches itself so readily to the painting while in progress. The moist color settles around these particles and forms spots on the work which may not disappear in the firing. This should be avoided as far as possible. If it should happen, however, that any particles fall upon the painting, they may be removed with the point of a needle. This instrument will also be found useful for removing surplus color, when desired.

The tube colors should be preserved from heat as far as possible. If they become dry in the course of time, which should not be before they have been kept a year, at least, the other end of the tube may be opened, and the color taken out with the palette knife, and rubbed down with turpentine. It would be well to change the position

of the tubes lying in the box, occasionally, to prevent the color separating from the oils with which it is mixed. The tops should also be screwed on very tight, as the paint is liable to run out.

CHAPTER V.

COMPOSITION OF PALETTES FOR VARIOUS STYLES OF PAINTING.

In the following pages will be found lists of colors and mixtures to be used for the various subjects which may be painted on china.

I do not wish to be understood as saying that these are the only combinations that can be used, or that they are the best, but simply that in my own experience they have produced the desired results.

Each artist has his own method of making up his palette. The liberty of choice enjoyed in mixing oil or water colors is, however, somewhat abridged in china painting by the chemical changes produced by the action of the fire, which forbids mixtures which would be quite innocent in either of the former mediums.

The following palettes are, however, suggested

for the benefit of those unfamiliar with the use of enamel colors as combinations which may be relied upon to produce the results attributed to them.

I have endeavored to limit the number of colors as far as possible, believing that where one color will produce the desired effect, the mention of half a dozen only confuses the student. The difficulty of indiscriminate mixing, referred to before, renders a greater number of colors necessary in china painting than in oil or water colors. Yet, as in those branches of art, it is better to have a limited palette, and learn its full capacity, than to become involved in the intricacies of one embracing more colors, but producing combinations less likely to harmonize. It is certainly less confusing, and leads to more thorough knowledge, for a beginner to use few colors, and comprehend perfectly how effects are produced.

It will be proper to introduce here a classification of the colors used in china painting, which

will lead to an understanding of the way in which they may be mixed.

M. Lacroix, from whose work the following is adapted, has classified the colors with regard to iron, which plays an important part in the composition of many of them.

First Group. Colors without iron—the whites blues, and the gold colors.

Second Group. Colors containing but little iron—yellows and greens.

Third Group. Colors whose base is iron—the reds, flesh reds, red browns, iron violets, the browns, brown yellows, ochres, blacks, and most of the greys.

In the first class, the colors whose base is gold are the carmines, carmine lake, the purples, and the golden violets.

The foundation of these colors is purple of cassius, which is made of gold and tin. It gives tints which vary from lilac to dark violet. Modified by silver and different fluxes, it produces carmines and purples.

If the carmines are fired at too low a tempera-

ture, the silver predominates and the color takes a dirty yellow tint. If, on the contrary, the temperature is too high, the shade of silver is completely destroyed, and the carmine changes to lilac. This effect does not exist in the purples to the same degree. Carmine will also take a yellowish tint in the firing if applied very thickly.

The blues, with rare exceptions, owe their color to cobalt. As the mixture of cobalt and iron gives tints varying from light grey to black, according to the proportions, it is well to take great precaution when using the blues with the reds, flesh colors, browns, and ochres.

The brushes which have been used with these colors should also be carefully washed before using for a blue of which a pure tint is desired.

Care should be observed in the use of the yellows, some of which cause the colors mixed with them to disappear entirely in the fire. This effect is seen where too much ivory yellow is mixed with red.

Mixing yellow and jonquil yellow do not contain iron, and are preferable, therefore, for mix-

ing with the blues to obtain fresh greens. Other yellows containing iron should, on the contrary, be used with the iron colors.

The color called silver yellow does not contain silver; it is composed of jonquil and orange yellows. It mixes readily with the gold colors, also with iron violet, and sometimes with reds.

Coral color can not be used in painting, on account of its extreme sensibility to the fire, which at a high temperature will sometimes change it to yellow.

Most of the browns owe their tints to the mixture of cobalt and iron. They frequently contain zinc also. The yellow browns and ochres are generally produced by a mixture of iron and zinc.

The best blacks are usually made of cobalt and iron, like the browns, only in the former the cobalt predominates.

All the greys, with the exception of platina grey, are made by mixing colors of the different groups—blacks, blues, and reds, according to the tints required.

Greys may also be obtained in painting by mixing complementary colors—the reds and greens, yellows and violets (those composed of carmine and blue). Grey may also be made by mixing one-third ivory black with two-thirds sky blue. Wherever black is used very thinly to form a grey tint, it should be mixed with a little blue. Black used alone, in thin washes, is sometimes found to rub off after the firing.

Some colors require more heat for their fusion than others. These are called hard colors.

As the flux, joined to the coloring oxide in the manufacture of the colors, lightens the tint, it follows that those containing less flux—viz. the dark colors—are harder than the light colors.

The lighter and more fusible colors, though burning in the same time, are the *bleu ciel clair* (light sky blue); *carmin tendre, A* (soft carmine, A,); the *gris perle* (pearl grey); *gris roux* (reddish grey), and the *jaune d'ivoire* (ivory yellow). These colors should not be applied too thickly, as they will be liable to scale in firing.

If by any means the painting should not have

received sufficient glaze in the firing, the glaze may be restored by applying a light wash of one of the more fusible colors, and firing the piece again. For mixtures of brown or reddish tones a very light wash of fusible grey may be used.

The *blanc fixe* (permanent white) and other opaque compounds are seldom employed in painting on hard porcelain, their use being limited to little touches or spots, for heightening the effect in jewels or embroidery, or for the highest light in white flowers or drapery.

It would be better before beginning to paint with the china colors, to arrange, upon a plate of the kind of china you wish to use, samples of the different colors and mixtures, carefully marked. This, after it has been fired, will be of great assistance for reference in using the colors.

PAINTING IN MONOCHROME.

Painting in this style, *en camaïeu*, as it is called by the French, has a very pleasing effect on china, and, as it is somewhat easier than that in

which various colors are used, may be recommended to the beginner, especially if unfamiliar with the use of oil or water colors.

Paintings *en camaïeu* may be made in almost any color. The easiest to use for this purpose are, probably, *violet de fer* (iron violet) or *brun rouge riche* (deep red brown). Sepia may also be easily employed with good effect.

Monochromes in pink and blue are very pretty; but the colors are rather more difficult to use.

Carmine may be used for pink monochromes. The tint, however, is likely to be affected differently by the fire, where it is laid on thinly or the contrary. It is difficult, in using this color, to have two pieces intended to match fired with the same tint.

Pourpre riche (deep purple) may also be used, with less risk of having the tint altered by the fire

PALETTES FOR FLOWER PAINTING.

Colors Required.

Vert, No. 5, *pré*—Grass green.
Vert, No. 6, *brun*—Brown green.
Vert, No. 7, *noir*—Black green.
Vert pomme—Apple green.
Jaune à mêler—Mixing yellow.
Jaune jonquille—Jonquil yellow.
Jaune orangé—Orange yellow.
Bleu ceil azur—Sky blue.
Bleu riche—Deep blue.
Carmine, No. 3, *foncé*—Dark carmine.
Pourpre riche—Deep purple.
Violet d'or—Golden violet.
Rouge capucine—Capucine red.
Rouge orangé—Orange red.
Brun rouge riche—Deep red brown.
Rouge chair, No. 2—Flesh red, No. 2.

In laying on the first washes, for a flower, the strokes of the brush should proceed from the

circumference to the center, and for a leaf, from the central vein to the edge. In painting grasses or parallel-veined leaves the stroke should be made from the top to the bottom of the leaf. After the design is prepared, lay in first the local tints of the various parts, so that they may be dry by the time you wish to paint the shadow Do this with flat, broad washes, blending them with a small brush, if necessary. By the time the last of these washes has been placed the part first done will be ready for the shading.

The centers of flowers should be painted directly on the china. Any adjacent colors which may infringe upon the outline must be scraped or wiped off.

On white grounds the painting should be rather light, to avoid a hard effect, and on dark colored grounds, correspondingly dark, to avoid weakness.

FOLIAGE.

For the local tint use *vert*, *No.* 5, *pre* (grass green). Blue may be added if a bluish green is desired, or, if a yellow green, it may be made

by the addition of *jaune à mêler* (mixing yellow) or *jaune jonquille* (jonquil yellow), if a more brilliant tint is desired.

Vert brun (brown green) may be used for the shadows, mixed with grass green, using more of the former as the shadow deepens. A small quantity of dark blue may also be added to darken and subdue the tint.

Vert, No. 7, noir (black green) may be used in some cases for very dark shadows, but should be employed with great care, as it is a color of great intensity.

Carmine and purple may be used with greens, when greyish shadows are required.

Greens may also be shaded with brown. *Brun 4 foncé* (dark brown) may be used also for touches of brown. For red touches on leaves, etc., *violet de fer* (iron violet) may be employed.

FLOWERS.

For white flowers the surface of the china forms the local tint. For the shadows a grey

made of black with the addition of a very small quantity of blue may be used, or any of the other greys previously mentioned. *Gris noir* (black grey) is a bluish grey of great intensity, which must be used with great care, especially in mixtures with reds and yellows.

The highest lights may be touched with *blanc fixé* (permanent white) or *blanc chinois* (Chinese white).

Yellow flowers may be painted with *jaune à mêler* (mixing yellow) or *jaune jonquille* (jonquil yellow) and shaded with *vert brun* (brown green). When touched with brownish red, *violet de fer* (iron violet) may be used.

For blue flowers either of the blues may be used according to the tint desired. They may be shaded with the black or *gris noir* (black grey). Some colors, such as that of the common pale blue morning-glory, may require the addition of a little carmine.

Pink flowers may be painted with carmine, and shaded with a grey made of carmine and *vert pomme* (apple green).

Dark crimson may be made with *pourpre riche* (deep purple), shaded with the same.

Dark purple flowers can be painted with *pourpre riche* (deep purple), and *bleu riche* (deep blue), adding more or less of the blue, according as the color desired is more purple or crimson. They should be shaded with the same color. This mixture forms a tint of great intensity. *Violet d'or* (golden violet) may also be used for purple flowers, with the addition of *bleu riche* (deep blue), when desired.

For red flowers there are *rouge capucine* (capucine red), *rouge orangé* (orange red), *brun rouge riche* (deep red brown), or *rouge chair* (flesh red) They may be shaded with the same tint used for the lights, and by the addition of black, brown, or *violet de fer* (iron violet), according to the color desired.

Yellow centers of flowers may be painted with mixing yellow, shaded with brown green, and touched with sepia or heightened with jonquil or orange yellow.

When floral designs are painted from na-

ture, it would, perhaps, be better to make the studies in water-colors. The painting can then be executed on the china with more freedom.

Designs in water-colors are better suited for reproduction on china than when painted in oil colors, as the former method bears a much closer resemblance to china-painting.

The flowers should be arranged in a careless, graceful manner. A design occupying one side of a plate, for instance, and straying over into the border, will be more pleasing than one placed directly in the center. Grasses may accompany the flowers with good effect, and are so easy to paint that they may be recommended to the beginner as good subjects for the first studies from nature.

BUTTERFLIES.

Butterflies form a very pretty accompaniment to flowers on china. They should be painted in positions as natural as possible. After the sketch

is made the black markings and veining of the wings should be painted with *noir d'ivoire* (ivory black), and afterward the intermediate spaces filled up with the proper colors. For brown butterflies, sepia may be used. Take *jaune à mêler* (mixing yellow) for the common yellow butterfly, and shade with *vert brun* (brown green).

PALETTE FOR LANDSCAPES.

Colors Required.

Vert, No. 5, pré—Grass green.
Vert, No. 6, brun—Brown green.
Vert pomme—Apple green.
Vert noir—Black green.
Bleu ciel ou azur—Sky blue.
Bleu riche—Deep blue.
Vert bleu riche—Deep blue green.
Brun, 4 foncé—Dark brown.
Brun sépia—Sepia.
Jaune d'ivoire—Ivory yellow.
Jaune à mêler—Mixing yellow.
Carmine, No. 3, foncé—Dark carmine.
Noir d'ivoire—Ivory black.

Sketch lightly with a hard lead pencil. Wash in the sky with *bleu ciel* (sky blue) and blend it. Clouds should be taken out before it dries. This may be done by wiping off the color with a cloth. To prevent it from drying too quickly the color used for the sky might be mixed with a little more oil.

Shadows of the clouds may be painted with a grey made of ivory black and sky blue. If a yellowish tint is desired for the lighter parts, *jaune d'ivoire* (ivory yellow) may be used.

The distance can be painted with *vert pomme* (apple green) and carmine, allowing the apple green to predominate.

For a tint more purple, *vert bleu riche* (deep blue green) may be used with carmine.

For nearer parts, take apple green subdued with *vert noir* (black green), or *vert brun* (brown green).

These tints must all be applied very delicately.

The trunks of trees and particularly any branches relieved against the sky may now be sketched in with *brun*, 4 *foncé* (dark brown).

The foliage should be painted with short, broad touches, to give the proper effect. For the highest lights, when the color is yellow green, use *vert*, *No.* 5, *pré* (grass green) and *jaune à mêler* (mixing yellow). For the middle tints, grass green alone. Shadows may be made with the addition of *vert brun* (brown green).

A good tint for the dark shadows can be made from grass green subdued with brown green and a little deep blue.

Black green is a good color for very intense tints, but must be used sparingly.

Water may be painted with apple green and sky blue; also, with *vert bleu riche* (deep blue green) applied delicately. For reflections of trees, use black green heightened with grass green.

For earth, ochre, or any of the lighter browns, such as yellow brown, or sepia, may be used, subdued with black.

PALETTE FOR HEADS OR FIGURES.

Colors Required.

Rouge chair, No. 2—Flesh red, No. 2.
Brun rouge riche—Deep red brown.
Jaune d'ivoire—Ivory yellow.
Bleu ciel ou azur—Sky blue.
Noir d'ivoire—Ivory black.
Brun 4 *foncé*—Dark brown.
Brun Sépia—Sepia.

METHOD OF PAINTING A HEAD.

Sketch the design very lightly with a hard lead pencil. If you have difficulty in preserving a pencil outline while working on it, the sketch may be made in water colors, or with an enamel color mixed with water. This has the advantage, that it will allow you work over it without coming up. Take any reddish color and make a very delicate outline with the brush.

For the background, mix about one-third *noir*

d'ivoire (ivory black) with two-thirds *bleu ciel* (sky blue). With this mixture commence by washing in the background lightly, making it darker near the head and lighter toward the outer edges, where, when blended, it should lose itself in the white of the china. This tint should be laid very rapidly, leaving the outer edge in irregular, cloud-like masses. The color should be rather oily, so that it will blend better. You will hardly be able, however, to put in more than one-half before it is ready to blend, if the head is of any size. It can, however, be readily joined above the head where the tint is light. By the time you have washed in one-half your background, it will then be ready to blend, if the color has not been used too wet, and you can proceed to level the tint with a medium-sized blender. Be particularly careful to soften the edges into an insensible gradation toward the white surface. If you have not been quick enough, and your background has become too dry for this, you will have to wipe it out and begin over again, using a little more oil with the colors.

The other side of the background is finished in the same way, care being taken that the juncture with the side already done should show as little as possible.

You may then proceed to the flesh tint. For this take one-third *rouge chair No.* 2 (flesh red No. 2), and mix it with two-thirds *jaune d'ivoire* (ivory yellow). Be careful not to take too much of the yellow, as, if an excess of it is used, it will devour the red when fired. The tint will, of course, be made dark or light, according to the complexion desired. With this tint wash in the local color of the face and neck, carefully passing around your tracing if it is in pencil. It will probably be necessary to blend this tint, using a small brush.

You should be careful not to cover so large a surface with this wash that it will dry before you have time to blend it. The whole of the face should be done at once if possible, as otherwise it will be difficult to hide the juncture.

The local tint of the hair may then be washed in, and that of any drapery which may be col-

ored. Leaving this part of the work to dry, you may now return to the background, which will now, probably, be dry enough to work over, with care.

If it should not be dry enough, the piece may be put into the oven a few moments to dry the first washes.

Work over the background with cross hatchings of the tint previously used, taking a moderately large brush, and making the lines rather broad, not too long, and very slightly curved.

Form in this way a shading in the background, beginning very lightly inside the edge of the first wash, and proceeding with an insensible gradation toward the center, darkening it in this way around the head, according as you wish a dark or light background. Where it is suitable, a light background seems to have the most pleasing effect upon the white ground, and is also less difficult to paint.

In working over the tints first laid, be very careful not to have your brush too wet, as that will cause the under color to come up. The

damage thus done is very difficult to repair. This will not be so likely to happen if the work has been dried in the oven.

After the background proceed to the face. For the shadow tint mix one-third *noir d'ivoire* (ivory black), one-third *bleu ciel* (sky blue), and one-third *rouge chair, No.* 2, (flesh red, No. 2). Be careful not to have too much blue, as that will give the shadows too green a tint in the firing, although it will not show previously. More of the flesh color may be added when you wish to lighten the shadows, or when a more ruddy tint is desired. The features may be outlined delicately with this shadow tint, and then the masses of shadow should be placed. Put them as nearly as possible in their proper places, with a very light touch, and without blending if possible.

It may probably be necessary to blend the edges, and the darker portions should, perhaps, be lined and stippled in the finishing. Before the shadows are completed, the cheeks and lips may be touched with *brun rouge riche* (deep red brown), used very delicately. This color is rather

intensified than otherwise by the fire, and although it is an excellent tint for this purpose, it must be used with care.

The lips may be shaded with a little black mixed with the red brown, or with *violet de fer* (iron violet). The nostrils may also be delicately touched with this color, but should be darkened with the shadow color of the flesh.

The eyebrows and eyes should now be painted, the eyebrows with a light tint, corresponding to the local color of the hair, and the shadow color to be used in the hair. Blend them naturally into the flesh color with delicate lines and shadings. The eyes may be painted with *bleu ciel* (sky blue) shaded with black, or with brown shaded with black, if dark. The spot of reflected light on the eye may be left the white of the china, or touched with permanent white.

White may be employed for such purposes as this, or for pearls, to imitate embroidery or lace, and for the highest lights in white drapery, but must be used with care. It seems rather liable to spread in the firing, and sometimes to blister.

But to continue—if the hair is dark, take *brun, No.* 4, *foncé* (dark brown) and shade it with black mixed with the brown; or, if light, use yellow brown, or sepia, subdued with black. If very light, ivory yellow can be used for the first wash, and left for the highest lights, shaded with sepia and black. The touches of the brush in making the hair should be fine strokes, outlining and giving direction to the masses. The hair should never be blended.

These finishing touches of the hair, as well as those on the face, should be done with a fine brush. After the various parts have been brought to about the same degree of finish, they should be gone over again, and be brought together up to the highest degree of finish possible to the painter. It is well to know when to stop, however, as overworking is as bad as lack of finish. There is a great deal in knowing when to let well enough alone. When you do not see anything more to do, stop.

LETTERS AND MONOGRAMS.

Mottoes and inscriptions, monograms or armorial bearings, are frequently and appropriately used in the decoration of china. All such designs require the most careful drawing. If a monogram or crest is to be repeated on a number of pieces, it should be drawn on paper and traced upon the china, in order to insure that each repetition shall be just like the original, or if the painter possesses the requisite degree of skill, the letters may be drawn directly upon the china.

In decorations of this kind, gold and other metals are important factors, and the method of using them will be explained hereafter, as the same rules apply here as in other places where metals and colors are used together. We will concern ourselves now only with the drawing and the forms of the letters. While there is no form of decoration in which slovenliness of drawing or execution will be so painfully evident, yet with the requisite care, combined with firmness of touch, this kind of decoration could be executed by those who might lack the taste and skill for artistically higher kinds of painting. If the decorator wishes to use armorial bearings,

some good book on heraldry must be studied, so that he may understand the technical terms used in the descriptions of coats of arms, as well as all the necessary details of the work. A good manual will be found in the work on English Heraldry, by Charles Boutell, M. A., published by Cassell & Co.

In regard to letters, alphabets taken from the old illuminated missals are the best models. The bad taste displayed by the average engraver and designer of letters and monograms would be avoided, if the authors of these ill-shaped letters, covered with unmeaning excrescences, cared enough for their art to go for inspiration to the manuscripts wrought with such loving care by the monks, who were willing to spend years upon a single volume.

There has been, it is true, a great improvement in decorative lettering recently, yet there is much to be desired. A very useful manual upon the subject will be found in the book prepared by Messrs. Tymms & Wyatt. The illumined quarto edition of 1860 contains many fine examples, and will be found of great assistance to the student.

CHAPTER VI.

TINTED GROUNDS.

In mixing tints for borders or any considerable surfaces, it is necessary to use more oil than for other painting. It is especially desirable to mix enough balsam of copaiva with the color and the other oils, to prevent it from drying before there is time to blend it. The quantity of oil varies with the depth of the tint desired, and the particular color used, also the condition of the atmosphere at the time the ground is laid. Some colors, such as carmine and blue, require more oil than others, and are more difficult to lay. It is hard to give an idea of the amount of oil which should be used in any particular case. There is no danger of using so much that the paint will blister in the firing, when it is laid very thinly.

Enough color must be mixed to cover the en-

tire surface upon which the ground is to be laid, at once. If tube colors are used, it will simply be necessary to mix a little balsam of copaiva with them as they are taken from the tubes, to keep them from drying too rapidly. They may then be diluted with turpentine.

If the powdered colors are used they should be mixed with an amount of oil of turpentine, which would occupy nearly as much space as the powder, rather less of oil of lavender, and about twice as much balsam of copaiva. Afterward diluted with spirits of turpentine. For laying grounds. the color should be very thin, so that it will flow readily from the brush. Mix on a glass slab, and rub down well with a muller. When perfectly smooth, have ready a piece of the finest wire cloth, three or four inches square, bend it to form a depression in the middle, and strain the color through it, lifting it with the palette knife, and letting it drip through just before you are ready to use it, so that it may be free from any particles of dust.

Take a broad, flat brush, charge it well with

color, and pass it rapidly over the surface to be tinted. If a cup, hold it upside down by the handle, and make the strokes from the bottom to the top; or if you wish to tint the border of a plate, the strokes may be made across the flat edge, taking a direction from the center to the circumference. If a vase, you should begin at the top, passing around with short, over-lapping strokes, taking care that the color is not so wet that it will run.

When the surface has been covered, let it rest a moment, until the color begins to set, and, upon lightly touching the edge, it feels slightly sticky. Then go over it with the blending brush, holding the brush perpendicular to the surface upon which you are operating, just touching it, not dragging the brush or letting it rest upon the surface, and not twice upon the same place.

After waiting a moment or so, you may go over it again, and continue to blend it until the tint is perfectly even.

If the brush becomes charged with the color, it must be cleaned on a cloth wet with alcohol,

and left a few moments to dry, or it may possibly do to wipe it on a dry cloth. It is better, however, to have two or three blenders at hand, so that if one becomes unfit for use, another can be substituted at once.

Care must be taken that the brush, after it is cleaned in alcohol, should become perfectly dry before it is used again, as the alcohol will remove the color. Dampness should also be avoided when laying grounds.

A ball of cotton tied in a fine linen or cotton cloth is sometimes used for blending, instead of a brush.

The color which may have been allowed to go over the edge should be carefully wiped off as soon as you have finished blending.

By the use of a turning wheel the work of putting on borders is, of course, much facilitated. The wheel, however, is not absolutely necessary, except when narrow bands are to be made. A full border for a plate may be put on in the manner described above.

It is difficult to describe narrow bands and

lines, even upon circular pieces of china, as they are seldom perfectly round, and the line has to be adapted to a slightly uneven surface. It would be as well not to attempt work of this kind, which had better be left to the decorator.

Where dark grounds are desired, the color should be dusted on by the following process:

Take a few drops of the oil especially prepared for this purpose, thin with spirits of turpentine, and mix thoroughly, by rubbing down with the palette knife. Afterward, with a large brush charged with it, pass quickly over the surface of the china, being careful not to leave any spaces uncovered and to put it on as evenly as possible.

Have ready a ball of cotton tied in a piece of soft raw silk, and touch it lightly, distributing the oil evenly over the whole surface. After waiting a moment or so until the oil has become slightly sticky, take a large blending brush, charged as fully as possible with the powdered color you wish to use, and dust it over the prepared surface, without slighting any

part. If a surplus of powder lies upon the surface anywhere, brush it off very lightly.

As the powder arising from this process is disagreeable, as well as injurious, means should be taken to prevent its inhalation.

This method, after all, is rather uncertain in unskillful hands, it being very difficult to measure the success of the work until after the firing, which, by rendering the color transparent, brings out every defect.

Grounds of delicate tint, however, are very pretty, and can be easily managed, after some little practice, according to the directions given above.

Besides the colors used in painting, there are others especially prepared for grounds, which can not be mixed.

It is as well to procure colors for grounds in powder; especially, if they can be had, those prepared by M. Lacroix, of the quality No. 3, which are as finely ground as the tube colors.

If it is desired to paint a design upon the tinted ground, the ground must be removed

from the place the design is to occupy. If this were not done, the color underneath would in the firing mix with those superimposed, and spoil the tints. This may be done by either of the following methods:

First, the ground may be tinted, and, after it is thoroughly dry, the design may be scratched upon the surface and the color removed with a scraper. A stick of soft wood, with a flattened point moistened with turpentine, is also useful for this purpose; or, if the scraper alone is used, the surface uncovered should be carefully cleaned, after its use, with the end of a cloth rolled into a point and moistened with turpentine.

The design may also be drawn upon the tinted surface with a hard lead pencil (if delicately and correctly done), and the color removed as before.

Perhaps the second method would be the best for any one not quite sure of drawing the design correctly at once. That is, to draw the design on the china first in India ink or any water color which will show. The ground laid over this will not disturb the outline, and, the sketch showing

through it perfectly, the design can be easily removed by the process described after the first method. This outline will burn out in the firing. It would, however, be better to remove it as far as possible, especially if dark, in order that it may not interfere with the proper treatment of the edges of the painted design.

Designs in colors, black silhouettes or monochromes in grey, may be painted in this manner upon tinted grounds.

CHAPTER VII.

MAT COLORS.

Since the introduction of the Royal Worcester ware, with its exquisite, ivory-like surface, and effective mat decoration of metals and colors, amateurs have been fired with an ambition to imitate it. Aside, however, from the production of pieces of "Royal Worcester," a very much abused term, by the way, the introduction of mat colors opens a new field to the china painter, wherein the most artistic effects can be produced.

After the soft harmony of the dead tints, those which take a glaze in firing seem garish in their brilliancy, and the painter is tempted to use the mat colors on all occasions. These colors are, however, unsuitable for ware intended for table use. The reason is that surfaces of articles decorated with unglazed colors are not

so easily washed as those which are polished, and it seems manifestly important that any thing intended for use should have a smooth surface, to which nothing would be likely to adhere, and which could be kept immaculately clean with little rubbing. There may be exceptions in the case of *bonbonnières*, or similar pieces, or even cups and saucers, where the surfaces are not much used.

The mat colors also form very beautiful combinations with the glazed colors in many decorative effects. These colors retain very much the same appearance after firing as before, so that it is easy to choose the tints desired from the great variety offered by the dealers. The mat colors are in effect the same as those prepared for underglaze painting, and in many cases the last named colors will do as well as those sold for the purpose. In the case of black I have found nothing so good as Lacroix's *noir* underglaze. In most cases, however, the underglaze colors, as well as those which are said to be especially prepared for mat overglaze, need

to have more flux added to make them adhere to the ware. All the mat colors I have used, except those of M. Lacroix, require an extremely hard firing to fix them. The French colors are not open to this objection, and fire very satisfactorily. There are numerous colors from which to choose, and of those I would suggest the following as offering sufficient variety:

Blanc crême mat—Mat cream white.

Brun rouge mat—Mat red brown.

Rouge à joues mat—Mat red for cheeks, or carnation.

Chair à plat mat, No. 10—Flesh tint, No. 10.

Brun hitume mat—Mat bitumen.

Brun jaune mat—Mat yellow brown.

Orange, No. 3, *mat*—Mat orange, No. 3.

Jaune, No. 2, *mat*—Mat yellow, No. 2.

Jaune, No. 3, *mat*—Mat yellow, No. 3.

Jaune d'argent mat—Mat silver yellow.

Vert mat, 32—Mat green, 32.

Vert mat, 34—Mat green, 34.

Vert mat pour fonds—Mat green for grounds.

Blue riche mat—Mat deep blue.

Noir mat—Mat black.

These colors are best procured in powder. They are most frequently used for grounds, and the grounds usually are of the light tints, especially cream, in imitation of the Royal Worcester. For this ground, which has the tint of old ivory, yellow or yellow-brown must be mixed with cream white until the desired tint is secured. There are preparations of these grounds already mixed from several American dealers. Those of Messrs. Grunewald & Busher, called the mat wax colors, are very good, and come in various tints—wax ivory for the light cream tint, with others, such as celadon, nile green, pink, fawn, chocolate, terra cotta, or olive. A beautiful deep cream tint can be mixed from white about three parts, yellow two, and bitumen one. *Rouge à joues*, applied lightly, gives a beautiful pale pink color, and *Vert*, 32, a lovely blue green. The dark colors can also be very effectively used as grounds with decorations of gold and other metals. Black gives a very fine

effect with designs of gold and platinum. For this, as has been said before, Lacroix's underglaze black works excellently.

These colors are usually applied in the method described in the previous chapter for grounds of glazing colors. After being mixed rather thin with a little fat oil thinned with turpentine, and a few drops of balsam of copaiva to keep the paint from drying too quickly, the color is laid on with a broad brush, and the surface is afterward made smooth and of an even tint by patting with a dabber of cottonwool tied up in chamois skin, or silk muslin. The dark colors must have a thicker consistency, and can be applied by strokes of a broad brush; but the best effect, in the case of dark colors, is given by dusting the color upon the surface already prepared with ground laying oil, as described in Chapter VI. This is not a difficult process, if the materials are right, and after practice has rendered the operator expert, but is usually a matter of some difficulty in unpracticed hands. The difficulty experienced in dusting on grounds

is frequently caused by the adulteration of the turpentine used. Much of the turpentine sold seems to be adulterated with benzine; and when this is the case, it causes the grounding oil thinned with it to dry in streaks, and it is impossible to apply the color evenly. If the process of tinting by dusting does not go on satisfactorily, suspect the turpentine, and try to get a pure article from another dealer. Devoe's rectified spirits of turpentine can be procured from any dealer, and it is better to use that preparation. As the dusting of color is at best, however, hardly a safe or pleasant operation, on account of its difficulty and the danger of inhaling the powder, perhaps the amateur would do better to employ the first method of tinting for dark grounds as well as for light ones. If the tint is not dark enough the first time, a second coat can be applied after firing. When mat colors are used in decorative designs, they are employed just as other colors, and mixed with each other, if desired, with the difference that they are not subject to the same change in appearance

after firing. They are usually employed in conventional decoration in combination with metals, and not in the painting of any naturalistic design. They could, of course, be used in this way, but, in most cases where the decoration of china is concerned, conventional design is in better taste. Very beautiful decorative effects may be produced by combining the mat colors not only with the various metals, but with the glazed colors. The design may be of mat color upon a ground of glazed color, or a mat surface can have a decoration of glazed color, which will not have a very brilliant appearance on account of the dead surface upon which it is applied, but which will give a pleasing effect. Designs in mat color can also be placed upon the uncolored surface of the china and surrounded by gold outlines and other accessory decorations of gold to form a ground work. Beautiful effects are produced by the use of deeply-tinted mat grounds afterward covered by a light application of gold, either dusted on or dabbled thinly over the surface with a blending brush.

CHAPTER VIII.

OTHER PIGMENTS AND MEDIUMS.

Water Colors.

Several years ago vitrifiable colors were introduced, which were put up in pans as moist water colors are prepared, and with which water could be used as a medium.

These colors are in all respects similar to the ordinary china colors in tubes, except that in working, water is used instead of spirits of turpentine, and a preparation called megilp, or water color medium, in the place of fat oil. The colors fire as other china colors, and are mixed and used in the same way. They may be recommended to those who find turpentine very disagreeable or even injurious.

The best colors that I have seen, prepared in this way, are the Royal Dresden china colors.

Of these a good selection would be the following: Relief White; Egg Yellow; Olive Green; Turquoise; Grass Green; Dark Blue; Carmine; Superior Pompadour Red; Brown Red; Flesh Red; Yellow Brown; Dark Brown; Grey for Flesh; Brunswick Black; Flux.

By the use of these colors, and the employment of alcohol in metal work, in the manner to be described hereafter, the odor of the turpentine may be avoided.

Although turpentine is generally used, and seems to be the most available and convenient medium for ordinary use, the matter is one of comparative indifference, and may usually be left to the idiosyncracy of the worker. The colors in powder contain the flux necessary to cause them to adhere to the surface of the china when subjected to the necessary degree of heat. All that is needed, then, is a medium which will render them of the proper consistency to be applied with a brush. Turpentine, with a little fat oil, ordinarily produces this effect. Some decorators use also clove oil, tar oil, oil of lav-

ender, or Dresden thick oil. If, however, the odor of these oils is disagreeable, water and the water-color medium can be used.

The medium is of little importance, the only requisite being, that the color shall be in such a condition that it can be applied smoothly with the brush and that it shall not have so much oil in it as to attract the dust or blister in the firing.

Vitrifiable Crayons.

The vitrifiable crayons introduced by M. Lacroix form a very interesting contribution to the variety of pigments for china decoration. These crayons are vitrifiable colors put up in pencils, and are intended for use on ground glass. Very beautiful work can be done upon this material; but we are now interested only in porcelain, and upon this, also, they can be most effectively used.

To give the proper surface to take the crayon, a mat ground must be applied. This can be of any color, but the most suitable is the light

cream, Royal Worcester tint. After the ground has been fired the crayons can be employed in exactly the same manner as charcoal or crayon upon paper.

The effect of a warm tinted crayon drawing upon the cream ground is very good. A stump can be used to blend the strokes of the crayon, or to rub in a tint, in just the same way as in charcoal work on paper. The pencils can also be used in connection with brush work. They can be sharpened as lead pencils, but the knife must be very sharp, as the crayons are very brittle.

The colors to be procured in tubes are also prepared in the form of pencils, and the same selection can be made; but the most appropriate for this work are the grisaille tints. Drawings can be made in a single color, but they are more pleasing when several tints are used, for instance when the drawing is made in a warm brown with accenting touches of deeper, perhaps reddish tones in the shadows. Of the desirable grisaille tints may be mentioned:

Grisaille fine teinte noire.

Grisaille ordinaire teinte noire.
Grisaille ordinaire teinte rouge.
Grisaille fine teinte brune.
Grisaille ordinaire teinte brune.
Grisaille fine teinte violacée.

Good combinations of these tints can be made with deep brown touches in the shadows with brown gray, or possibly with a little black gray; or, red brown with dark brown or brown gray; or, fine brown grey, which gives a pleasing grayish olive tint which may be used in softening the tints of the brighter colors.

The warmer brown or reddish tints will be found to be the most pleasing. There are, indeed, endless combinations in which these colors can be most effectively and artistically used, but these must be left to the taste of the decorator.

CHAPTER IX.

METALLIC DECORATION.

The precious metals, gold, silver, platinum, with bronzes of different colors, play a most important part in the decoration of china. Of these metals, gold is the most useful, as well as the most beautiful, whether used by itself or as a foundation for bronzes.

The different preparations of gold vary very much in quality, but it will be found that in the end the best is the cheapest. A poor quality of gold, which must be applied two or three times, rendering necessary so many extra firings, is less satisfactory, as well as more expensive, than gold which, while it may cost twice as much, gives a rich effect in one application.

Chemically pure gold can be purchased of several dealers, but the china painters, who use a great deal of it, would perhaps find it worth

the trouble to prepare it themselves. It will be found to be better, as well as cheaper, and, except for the handling of rather dangerous acids, is not a process attended by much difficulty. Pure gold can be procured of a jeweler, but the most conveniently accessible form is that of coin, which will do just as well, if care is taken to get rid of the silver with which it is alloyed.

To prepare gold for use in china painting it must first be dissolved in aqua regia. (A) Aqua regia is a compound of one part of nitric acid to three of hydrochloric. It can be procured of the druggist, but will probably be more effective if the two acids are mixed just before using. Place the gold in a glass or china vessel, and pour an ounce and a half or two ounces of aqua regia over it, and leave it until the metal is dissolved. Sometimes twenty-four hours will be sufficient for the dissolution of a five dollar gold piece, but at other times the acid works more slowly, and it may be necessary to pour off the solution already formed, and to place the remainder of the gold in fresh acid. When the

gold is all dissolved, the result is a certain quantity of a greenish-gold colored fluid, which is chloride of gold, and from which the gold must be precipitated. (B) If the gold which has been dissolved was not pure, there will be a sediment of silver at the bottom of the glass. The solution must be carefully poured off, leaving this sediment in the bottom of the glass. (C) The gold can be precipitated from the solution by means of protosulphate of iron, commonly called copperas. For this purpose, chemically pure copperas should be procured, and a saturated solution made in warm water. A saturated solution is one in which the water has taken up all the copperas it can hold. The copperas being dissolved, we are ready for the precipitation. (D) To facilitate this process, the gold must be diluted with water. A small portion can be poured into the bottom of each of three or four tumblers, which can be nearly filled with water. (E) The copperas should then be poured into the solution until it begins to turn cloudy and dark from the formation of the precipitate. It must be al-

lowed to stand until the precipitate of gold settles at the bottom of the vessel. (F) When it has all settled, which can be seen by the liquid having regained its clearness, pour the latter off, (G) and wash the precipitate several times in warm water. (H) The liquid poured off should be preserved and again treated with copperas, for fear that all the gold held in solution may not have been precipitated. (I) A little hydrochloric acid should be poured on the precipitate to get rid of any excess of copperas which may have been used in the process. (J) The gold precipitate will then be found to be of a rich light brown color, and should be washed again two or three times in warm water, and afterward (K) dried by placing the vessel containing it on top of a stove or very near the fire.

When perfectly dry, (L) the gold powder must have the flux, which is to make it adhere to the china, added to it. This flux is made of nitrate of bismuth, to which is added one-twelfth of powdered borax. The preparation of bismuth used should be, as mentioned above, the

nitrate, not the *sub-nitrate*, which is the form generally used in medicine. When the flux has been prepared, (M) mix it with the gold powder in the proportion of one part to ten of the gold. Some of the powder should be left unfluxed for use over colors, and some of the gold may be left in the form of powder for use in dusting upon grounds, if desired. The remainder of the fluxed gold may be kept mixed with the oils.

The gold prepared in the manner described above, produces a very rich effect of gilding. Pure gold can, however, be procured of dealers in artist materials, and perhaps, if one takes into account the loss which is likely to result during the process of dissolution by inexperienced hands, it may be found more profitable to buy the prepared gold. The Hasburg preparation is excellent. It is finely ground, and consequently very satisfactory to work with, fires well, and produces a very fine appearance with one application. The Hasburg preparations are in the form of powder, and include also green gold, red bronze, silver and gold, and platinum,

all of which are very good. The Cooley preparations—gold, roman gold, green gold, etc., which come mixed with the oils—are also excellent. Marsching's platinum presents a brighter and more silvery appearance after firing than the other preparations of the metal, but needs more flux to make it fire at the temperature required for gold. The platinum prepared by Alling is finely ground and fires well. The platinum is always, however, in a state of fine division, and consequently very pleasing to work with. The matter of grinding is very important in metal work and manufacturers would do well to consider it, as some bronzes which would be very useful in regard to color, are practically useless because they are so gritty as to be very disagreeable to work with. Very beautiful effects can be produced by combining gold with silver or bronze, and while the varied metallic tints are less expensive than pure gold, they are very pleasing, and enhance the beauty of the gold by contrast.

APPLICATION OF METALS.

Gold and other metals may be kept mixed with the oils ready for use. If they are not finely ground the constant rubbing which they receive when the mixture is thinned for use tends to improve them, and no injury can result except the attraction of dust to the surface. This must be prevented by keeping the mixture covered when not in use. The stacks of china saucers for water colors, forming covers for each other, are excellent for this purpose. It is best to have a stack of rather generous size, so as to give more room for rubbing down with the palette knife, and also to have a number of saucers in which to keep the different kinds of metals, gold, silver, platinum, mixtures of gold and silver, and the various bronzes.

The powder should first be mixed with a drop or two of fat oil, and when well rubbed down, should be diluted with spirits of turpentine in sufficient quantity to render it of the proper consistency for working. This is a very nice

point, and one which is likely to give the novice a great deal of trouble. In the first place, the quantity of fat oil in the mixture should be very small. The fat oil is necessary, only, to cause the metal to adhere to the china so that it can be handled before firing without danger of rubbing off. It has no other use, and too much of the oil will cause lines applied on the surface of the china to spread, and in other ways increase the difficulties of handling, besides rendering the application liable to blister in firing. Some recommend tar oil, but from my own experience I am inclined to consider it highly objectionable as a medium for gold. It greatly increases the liability to spread. Gold is most frequently used in the form of lines, and nothing is more annoying than to see the line you have carefully made begin to spread and lose its delicacy. Tar oil also delays the drying of the mixture to such an extent as to attract dust, which is fatal to the good appearance of line work. In addition, it causes the mixture to assume a very dark color, and so, deceives the painter in regard to the

thickness of the gold. He is liable to imagine that it has been laid thickly enough when the oil has only held in solution a small quantity of gold, which will give but a shabby effect after firing.

Gold lines can be drawn easily, as well as with the greatest precision, by the use of a lining pen. If this tool is used, however, tar oil must certainly not be the medium, as it causes the gold to separate from the oil in such a way that it is impossible to form a line with the pen. It is best in all cases to use fat oil with gold, and in line work it is absolutely essential that nothing else should be used, and very little of that. There should be enough oil only in the mixture to make it flow from between the points of the pen and to keep it moist while what has been taken up, is used. The use of a lining pen renders it possible to make lines of an even degree of thickness, as the pen can be set to any width of line. The freedom with which lines can be drawn with it, also, gives a character quite different from any thing which can be done with a

brush. A lining pen can be procured from a dealer in artists' materials, or better, from an instrument maker. It is best to get a good one, which will cost about a dollar, although the price for a fine one is a dollar and a half, or more.

The usage on china, especially if lines are made over mat colors, is rather hard on the steel points of the pen, and it is soon liable to become worn out of shape. When this happens, the points can be sharpened and rubbed into shape upon a whetstone. To do good work, the points must be kept in order.

As has been said before, the metallic powder must not be diluted with too much turpentine, or it will be so thin that the lines will spread. A drop only, must be lifted upon the end of the palette knife to thin the mixture from time to time. Even when no more fat oil is added, and the turpentine only is used in small quantities, the mixture is liable, in a warm atmosphere, to become oily from the evaporation of the turpentine. When this happens, and the lines applied to the china have a tendency to spread, and the

gold to look dark and sticky, and to attract the dust, the surplus oil must be gotten rid of. The simplest plan to accomplish this is to pour into your saucer as much alcohol as it will hold, and let it stand until the gold has settled. The oil will then be found floating on the top, and can be poured off. After waiting until the alcohol has dried out of the gold, or after drying it by artificial heat, you will have your gold in the form of a dry powder, and can begin again.

Other metals can be applied in the same manner as gold. Silver must be laid on very thickly to make a good appearance after firing. Silver, however, while producing very beautiful effects by itself, is so liable to injure the color of other metals, gold especially, when applied in proximity to it, that there is very little satisfaction in using it, and it is better, where possible, to substitute platinum.

Hancock's double prepared silver is the strongest, and comes out very well after firing, but is particularly open to the objection of eating up or discoloring every thing near it. Platinum pro-

duces an effect, similar to silver, with a rather more steely hue, but it can be used with gold without injuring the color of the latter. It does not need to be applied as thickly as silver, and after firing does not tarnish so easily. It comes from the firing with a fine dead surface, and if once burnished, has the quality of retaining the polish after it has been refired. Gold previously burnished becomes dead in firing, and the quality of platinum referred to may be utilized when it is combined with the former metal.

For application over glazed colors, gold must be unfluxed. The unfluxed gold can also be used over mat colors and over relief, but is not so essential as in the case of highly glazed colors. In the gilding of handles or other large surfaces, bright gold may be applied first, and after it has been fired, the burnish gold can be dabbled over the surface with a blending brush, or dusted on. The bright gold gives a good foundation, and the burnish gold can be applied more smoothly as well as more economically.

CHAPTER X.

BURNISHING.

The metals come from the fire with a dead surface, which must be burnished or rubbed to the degree of finish desired. A dull polish is usually to be desired, and this is best secured by the use of a glass brush.

This tool, however is by no means a safe or pleasant one to handle, and must be used with the greatest caution. A fine dead surface can be secured by burnishing with an agate burnisher, and then re-firing. On coming from the fire again, the surface will have the dead finish desired. Or, after burnishing, the metal can be rubbed with putz-pomade, which will take off some of the brilliant polish, and leave a beautiful mat surface. This latter treatment is especially successful with decorations of gold and silver, on black or dark grounds. Metal can

also be polished with the aid of whiting, rubbed on with chamois skin. All these methods are more troublesome, as well as less satisfactory, than the use of the objectionable glass brush. This gives a fine surface with the least amount of trouble, and there seems to be nothing which will quite take its place. If it is used, however, great care must be exercised to prevent the inhalation of particles of glass, or to keep them from falling upon the clothing, or sticking into the hands. The particles seem usually to fall, so that the greatest danger is to have them forced into the skin. The dropping of the sharp particles upon the clothing can be prevented by holding the object to be polished as far away from the body as possible, and catching the bits of glass threads which fall off upon a paper. Heavy gloves should be worn to protect the hands, and the brush should be grasped as close to the rubbing surface as possible.

When a bright surface is desired, as is frequently the case with gold, especially in line work, the metal must be rubbed with an

agate burnisher. These tools are of different shapes, and it is best, perhaps, to have one with a sharp point, and another with a blunt, rounded end, to suit the forms of the various surfaces.

The burnisher must be passed over the surface with a light, firm touch, not held in such a way or with a pressure so strong that a careless movement might result in a scratch on the surface of either the china, or the gold, but with a delicate touch, and a pressure just sufficient to burnish the metal. Every point of the surface must be passed over, for, if the strokes of the burnisher have not covered every part, the surface will have a scratchy appearance, which will cause the gilding to appear imperfect. The process of burnishing must be continued until the gold presents an evenly brilliant appearance, which condition can not fail to be secured by the skillful use of the burnisher, provided the gold has been applied thickly enough to cover the surface of the china.

When properly fired, the gold will come from the kiln with a slight golden luster. If the sur-

face is perfectly dull, like yellow paint, the gold has probably not been fired at a temperature high enough to attach it to the surface of the china, and it should be tried cautiously in some place to find out whether it has been fired sufficiently to bear burnishing. If the surface is not hard, and does not take a brilliant polish at once, the piece must be re-fired.

CHAPTER XI.

PASTE FOR RAISED GOLD.

The effect of metallic decoration is very much enhanced when the outline, or even the entire design is raised above the surface. This is done by means of a preparation which has body enough to produce the necessary relief. As it is generally used under gold, it is appropriately colored. That prepared by Hancock & Sons, and which is of a deep yellow color, is the best.

There are several different ways of mixing the paste; some using syrup and water, and others oil. The method commonly employed is to mix the powder with oil of tar, and thin the mixture with spirits of turpentine. It must be kept very thick, as if used too thin it will spread and ruin the work, and is better if mixed some time before using. There is, in fact, but one state in which it can be satisfactorily used,

and it is said that in factories, when such work is produced, the workmen have several saucers of the paste at hand, in various stages of moisture, so that one can always be found in just the condition necessary for good work.

The tar oil seems to be the best for use in raised work, as it gives the mixture that tenacious, stringy quality desired in order to form good lines of paste.

The oil, however, exhibits its tendency to spread, especially if too much has been used. The turpentine with which it must be thinned also evaporates, and increases the oiliness of the mixture, rendering it still more liable to spread. This troublesome tendency is in a great degree prevented by using alcohol to thin the mixture instead of turpentine. The alcohol dries so quickly that if the paste has been made too thin it soon acquires the right condition, although with the disadvantage of holding it but a short time before it must be thinned again. Its action in restraining the tendency to spread, however, more than counterbalances this drawback, and it

introduces no dangerous element. For the danger of the mixture becoming excessively oily from the use of turpentine, is one which not only affects the working of the paste, but may cause it to blister in the firing.

Sometimes, after alcohol has been used, the mixture gets into a condition where the oil separates from the powder. When this happens, a drop or so of turpentine will usually set it right again, or some fresh powder can be added, or a little more tar oil may change the condition of the mixture.

To do good work the powder should be so well ground with the oil that the paste is perfectly smooth. When a very delicate line of paste is desired, it may be made by the use of the lining pen. For this method of application the paste can be thinner than when intended for use with the brush, and it would be better to substitute balsam of copaiba, or Dresden thick oil, for the tar oil. Either of these oils causes the paste to work very smoothly, with, however, a greater tendency to spread than is given by the tar oil.

This renders them less satisfactory for lines made by the brush, for which nothing seems to do so well as tar oil thinned by alcohol. This may, however, be a matter of individual experience, as some use Dresden thick oil with good effect.

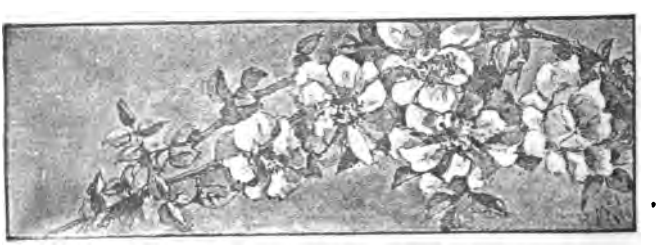
Lines made with the pen, however, can not be raised so high as when made with the brush, unless a second application is made after the first has dried. They can, however, be made of a more even degree of thickness than with the brush, where the slightest variation in the condition of the paste has a tendency to change the appearance of the line.

The paste must be fired before the gold is applied. It is sometimes possible to fire gold and paste at the same time, but it is always safer, and the work will usually present a much better appearance, if the paste is fired before it is gilded.

To prevent accidents in firing, the paste should be thoroughly dried before it is put in the kiln, and it should dry naturally, not by the application of heat. As the paste is usually ap-

plied upon tinted grounds, a piece decorated in this way requires several firings—first for the ground, then for the application of paste, and lastly for the metallic decoration.

When the gold is applied to the paste it should be mixed rather thin and with very little, if any, fat oil. It can then be taken up on the point of a fine brush and just touched to the line of paste. The porous paste quickly absorbs the turpentine, leaving the gold upon its surface without the danger of having it spread over the edge of the line to the ground. By using very little oil the danger of scaling in firing is also avoided.



CHAPTER XII.

GENERAL REMARKS ON DECORATION.

In the decoration of china, appropriateness, or adaptability to the purpose, is of the first consideration. The design must be of such a character and so placed upon the surface as not to interfere with the lines of the object decorated, and must also be subservient to the use for which it is intended.

Decorators too often seem to have the idea, only, of doing something which shall be pretty in itself, without any reference to the object to be decorated, or to its future use. Although the design may be very pretty in itself, it may be so entirely inappropriate for the position in which it is placed, as to be very far from pleasing.

The artist should always have in mind the foundation upon which the decoration is placed.

This is of the first importance. If one wishes to paint a picture, it may be done upon china, and may have certain beautiful qualities peculiar to the material, but it must be done within certain limitations, and the artist is always more or less hampered by his medium. The most realistic rendering of nature can best be accomplished in other mediums. Moreover, if it were possible to accomplish this naturalistic treatment with such material, there are few objects upon which it would be appropriate. A plaque which is intended to hang upon a wall may have a picture painted upon it, but even in this place a conventional design, with a harmonious arrangement of color, would be more pleasing.

In the case of a vase, or other ornamental object, it is important that the lines of the decorations be of such a character as to bring out the beauty of form in the object decorated; not to display a pretty piece of painting, which may be entirely out of harmony with the surface upon which it is placed. In all cases, the object decorated should be held in some consideration. If

it is of beautiful form, then the aim of the artist should be to enhance that beauty, while decorating its surface, in such a way as to render it still more beautiful. In the decoration of an object intended for use, the application seems yet more obvious.

A plate, for instance, may, or may not be a very beautiful object in itself, but the intention of the decoration must be to render the piece more beautiful, while at the same time it does not interfere with the purpose of use, for which it was designed.

And here again, I would like to urge upon all who undertake the decoration of china, the importance of a knowledge of the principles of design. Too little thought is given to this matter, and the student far too often depends upon the teacher, or some other outside help, for ideas. Too often is the teacher expected to give not only instruction in methods, but ideas for design also. This is more than any pupil has the right to demand, and this state of affairs is good neither for teacher or pupil. The teacher is

overtaxed with the extra work of not only planning the design, but even it may be drawing it upon the china, while the pupil exhibits something as her work, to which she has no just claim, as the most important part has been done by another. But this brings us back to the charge so often urged before, that it *is* necessary to learn to draw before attempting decorative work. Not to know how to draw well, not to know how to sketch from nature, for that requires years of practice, but to have required sufficient manual skill to imitate simple lines, and to adapt from natural forms graceful motives for decoration. It is not such a difficult matter, but the hand must be trained to surety of touch, and the eye to perceive the suggestions of the varied natural forms displayed before us. The pleasure of being able to record the innumerable and exquisite combinations, of color and form all around us, with the something of creative skill needed to adapt them to our use, which gives a feeling of ownership in the studies thus made, will more than compensate for the labor required to ac-

complish these results. In the words of Hamerton:

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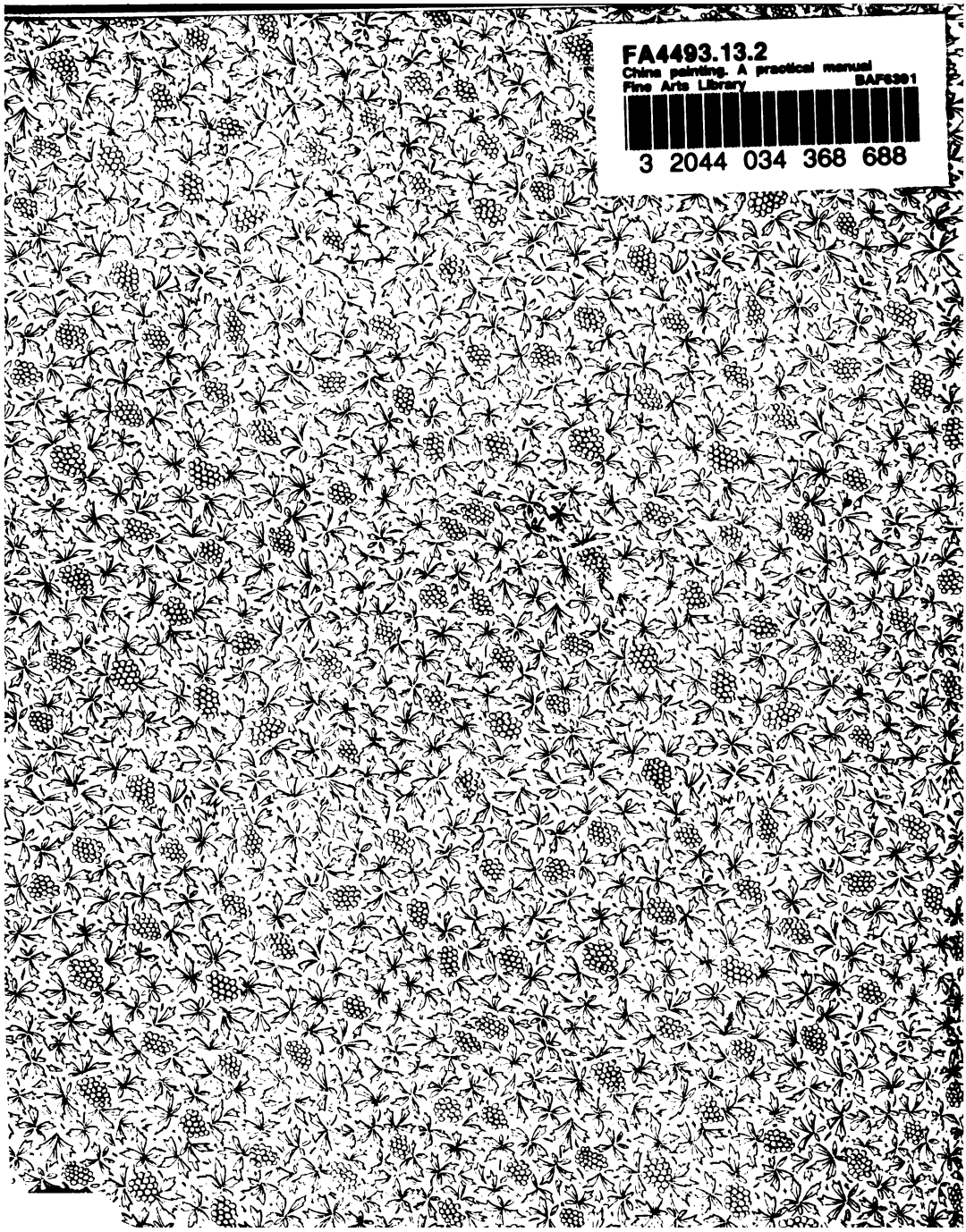
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